

Microplastic-induced changes in the rainbow trout gut: Insights from transcriptomic, proteomic, and microbial approaches

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The authors are fully responsible for both the content and the formal aspects of the electronic supplementary material. No editorial adjustments were made.

Electronic Supplementary Material (ESM)

Table S1. List of primers used for real-time quantitative polymerase chain reaction

Figure S1. Principal component analysis (PCA) of intestinal proteomic profiles of *O. mykiss* after six weeks' oral exposure to three different concentrations (0.5%, 2%, and 5%) of polyethylene (PE) or polystyrene (PS) microparticles

Table S1. List of primers used for real-time quantitative polymerase chain reaction

Gene name	Accession No.	Primer	F/R	Sequence (5'-3')	Product size (bp)	Reference
60S ribosomal protein L31	NM_001165047	60S	F R	AGCCACCAGTATGCTAACCAAGT TGTGATTGCACATTGACAAAAA	147	Perez-Sanchez et al. (2011)
Flap endonuclease 1	XM_021620112.2	fen1	F R	GGTCTACTAAGGCACCTCACTG AGTAGTCACAGCCACGACAGTATG	140	this study
Ghrelin/obestatin prepropeptide	NM_001124588.2	ghrl	F R	GATGCTGTGTACTCTGGCTCTGT ACCTGTCTTACCTGTGGTTCT	91	this study
Interferon gamma	NM_001124620.1	ifng	F R	GGGGACCCAGGAAATGATCGAG TCCTCAGCTCAGGTATCCTCCC	98	this study
Intelectin	XM_021615847.2	ilect	F R	TCTACTGTTGGTGAACTGCCCTC CTCAGTCTTAAATCGGTTGCGGC	96	this study
Nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	NM_001124730.1	nr3c1	F R	GGCTTGGCTTTCGGTAAACTCTC AGGTTGATGTGGTGACCTTGGAA	88	this study
PCNA-associated factor	XM_021600867.2	paf	F R	TGGCAAAAAGGCATTGGGGATT CTGGATTTCGATGCCTTGGACAC	125	this study
Solute carrier family 9 member a1b	NM_001124695.1	slc9a1b	F R	CAGCAGATCCTACAGCAGACACA TCCATCTCCATCTTCGTCTCCG	93	this study
Transferrin-a	NM_001124552.1	tfa	F R	ATGAAACTGCTTCTCGTCTCAGC CTCTTTGTCCGACTTTAGGCACC	102	this study
Interleukin 1b	XM_036979104.1	il1b	F R	ACATTGCCAACCTCATCATCG TTGAGCAGGTCCTTGTCCTTG	91	Perez-Sanchez et al. (2011)
Interleukin 2b	NM_001164065.2	il2b	F R	ATGCAACACACATCAGCATGAC TGTCGGTTGTGCTGTTCTCCTTA	73	Perez-Sanchez et al. (2011)
Interleukin 8	NM_001124362.1	il8	F R	AGAAATGTCAGCCAGCCCTTGT TCTCAGACTCATCCCTCAGT	69	Perez-Sanchez et al. (2011)
Interleukin 10	NM_001245099.1	il10	F R	CGACTTTAAATCTCCCATCGAC GCATTGGACGATCTCTTCTTC	70	Perez-Sanchez et al. (2011)
Tumour necrosis factor alpha	NM_001124357.1	tnfa	F R	GGGGACAAACTGTGGACTGA GAAGTTCTTGCCCTGCTCTG	75	Perez-Sanchez et al. (2011)

F = forward; R = reverse

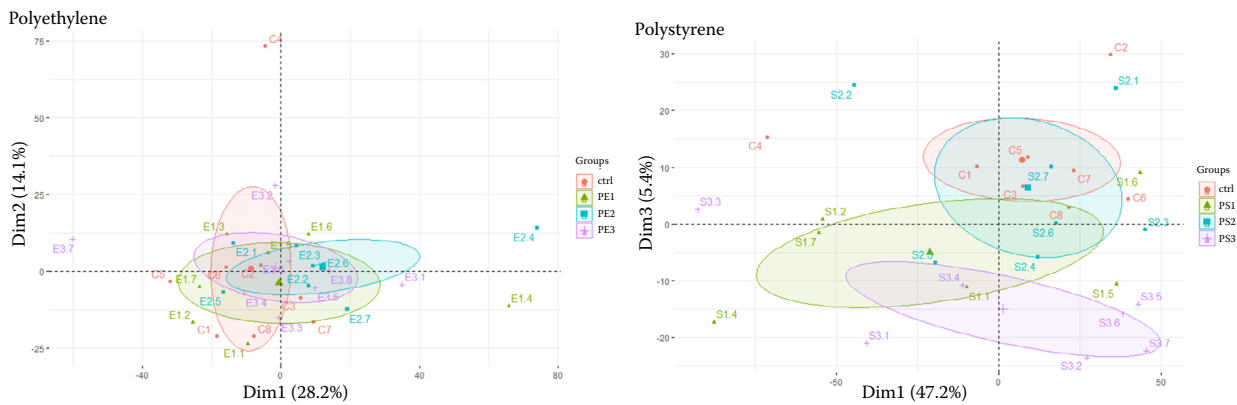


Figure S1. Principal component analysis (PCA) of intestinal proteomic profiles of *O. mykiss* after six weeks' oral exposure to three different concentrations (0.5%, 2%, and 5%) of polyethylene (PE) or polystyrene (PS) microparticles. Each point represents an individual sample ($n = 8$). The clustering pattern indicates treatment-related variation in protein expression. No clear separation was observed between some treatment groups, suggesting partial or non-significant proteomic divergence.

REFERENCES

- Perez-Sanchez T, Balcazar JL, Merrifield DL, Carnevali O, Gioacchini G, de Blas I, Ruiz-Zarzuela I. Expression of immune-related genes in rainbow trout (*Oncorhynchus mykiss*) induced by probiotic bacteria during *Lactococcus garvieae* infection. *Fish Shellfish Immunol.* 2011 Aug; 31(2):196-201.